

WHAT IS CLAIMED IS:

1 1. A digital amplifier comprising,
2 a gain regulation means which regulates an gain
3 for a digital audio signal,
4 a PWM signal generating means which generates
5 a PWM signal from said digital audio signal, said
6 gain which has been regulated by said gain
7 regulation means,
8 a switching means which switches a switching
9 power supply in response to said PWM signal
10 generated by said PWM signal generating means,
11 a detecting means which detects said gain which
12 has been regulated by said gain regulation means,
13 and
14 a silent PWM signal outputting means which
15 outputs to said switching means a PWM signal having
16 a duty ratio of 50%, instead of said PWM signal which
17 has been generated by said PWM signal generating
18 means, when said detecting means detects that said
19 gain is zero.

1 2. A digital amplifier comprising,
2 a determining means which determines a digital
3 audio signal as a silent signal, when the digital
4 audio signal has a bit value within a predetermined

5 range and is inputted for a predetermined period of
6 time,

7 a PWM signal generating means which generates
8 a PWM signal from said digital audio signal,

9 a switching means which switches a switching
10 power supply in response to said PWM signal

11 generated by said PWM signal generating means, and

12 a silent PWM signal outputting means which
13 outputs to said switching means a PWM signal having

14 a duty ratio of 50%, instead of said PWM signal which
15 has been generated by said PWM signal generating

16 means, when said determining means determines that
17 said digital audio signal is the silent signal.

1 3. An digital amplifier comprising,

2 an input signal determining means which
3 determines whether or not an input signal from a
4 reproducing unit exists,

5 a PWM signal generating means which generates
6 a PWM signal from a digital audio signal included
7 in said input signal,

8 a switching means which switches a switching
9 power supply in response to said PWM signal
10 generated by said PWM signal generating means, and
11 a silent PWM signal outputting means which
12 outputs to said switching means a PWM signal having

13 a duty ratio of 50%, instead of said PWM signal which
14 has been generated by said PWM signal generating
15 means, when said input signal determining means
16 determines that said input signal from said
17 reproducing unit is stopped.